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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/716,782	11/18/2003	Scott D. Cohen	07844-625001 / P578	6167

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EXAMINER

ALLISON, ANDRAE S

ART UNIT	PAPER NUMBER
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2624

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/12/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/716,782	COHEN ET AL.	
	Examiner	Art Unit	
	Andrae S. Allison	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on November 18, 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on February 9, 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>February 11, 2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 18-19, 22 and 25-27 are objected to because of the following informalities:

Claims 16 discloses "the method" whereas, the claims that they are dependent upon it, claims 18-19, 22 and 25-27 discloses "the product" which is inconsistent

Claims 20, 21-22, and 28-32 are being objected as incorporating the deficiencies of the respective claim upon which each claim depends.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 4, 7, 12, 15-16 and 18-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 4-5 and 20-21 recite the limitation "the gradient value" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claims 7 and 23 recite the limitation "the extracted location" in line 1 . There is insufficient antecedent basis for this limitation in the claim.

Claims 12 and 28 recite the limitation "the extracted object" in line 1 . There is insufficient antecedent basis for this limitation in the claim.

Claims 15-16 and 31-32 recite the limitation "adjusting one or more" in line 1 . There is insufficient antecedent basis for this limitation in the claim.

Claims 18, 19, 22, and 25-27 recites the limitation "the product" in line 1 . There is insufficient antecedent basis for this limitation in the claim. It appears that claims 18, 19, 22, and 25-27 should have directly or indirectly been dependent upon claim 17 rather than claim 16. For the purposes of examination, the Examiner is treating the claims as is.

Claims 20-22, 23-24 and 28-32 are being rejected as incorporating the deficiencies of the respective claim upon which each claim depends.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 2624

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-7 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Takahashi (US Patent No.: 6,665,439).

As to claim 1, Takahashi discloses a computer-implemented method for identifying one or more objects within an image (image recognition method; column 1, lines 11-12) the method comprising: receiving an image that includes at least one object (see Fig 4); identifying a plurality of edge pixels (edge image, column 12, line 54) in the image, an edge pixel being a pixel that borders two contrasting areas of the image (e.g. the contrast between object 42 and 40 in Fig 4), the plurality of edge pixels including both inner edge pixels and outer edge pixels (since the edge pixels are located between two objects, they will include both inner edge and outer edge pixels); and finding a substantially connected component correlated with each object (detect the shape of objects in the image, see column 12, lines 65-67), the substantially connected component comprising a set of the edge pixels that are connected by traversing substantially only edge pixels (column 12, lines 59-65).

As to claim 2, Takahashi teaches the method wherein the image includes more than one object (see Fig 4).

As to claim 3, Takahashi teaches the wherein identifying a plurality of edge pixels includes computing a gradient value for each of a plurality of pixels in the image (detect the color change between two objects, column 12, lines 61-63).

As to claim 4 Takahashi teaches the method wherein computing the gradient value for a given pixel includes comparing pixel color in a neighborhood of pixels surrounding the given pixel (column 30, lines 15-25).

As to claim 5, Takahashi teaches the method wherein computing the gradient value for a given pixel includes using an image smoothing filter-to-filter noise from the image (column 2, lines 52-56).

As to claim 6, Takahashi teaches the method further comprising passing each component to a processor that extracts the location of the object from the component (column 4, lines 58-59).

As to claim 7, Takahashi teaches the method, further comprising refining the extracted location (column 4, lines 20-54-58).

As to claim 10, Takahashi teaches the method, further comprising merging two components into a single component (column 29, line 63-67).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 8, and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi (US Patent No.: 6,665,439) in view of Huang et al (US Patent No.: 5,671,290).

As to claim 8, Takahashi does not disclose expressly the method further comprising using the extracted location to crop the object from the image. Huang discloses a method for identifying people (column 1, lines 23-13) including using the extracted location to crop the object from the image (column 2, lines 57-58). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have added the method for identifying people of Huang to the image recognition method of Takahashi to eliminate unneeded portions not specifically depicted part of the extracted object (column 2, lines 58-60).

As to claim 11, Huang teaches the method further comprising: extracting the location of each object from the image; and using the extracted object location to seed a crop operation (column 2, lines 57-58).

As to claim 12, Huang teaches the method of wherein using the extracted object location to seed a crop operation includes: for each object in the image, using the extracted object location to define a cropping area; and cropping all the defined cropping areas in a single cropping operation (column 4, lines 20-24).

As to claim 13, Huang teaches the method wherein: the extracted object location specifies how the object is aligned with respect to the image; and using the extracted object location to define a cropping area includes using the alignment of the object to define the alignment of the cropping area (column 9, lines 45 - 60).

6. Claims 9, 17 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi (US Patent No.: 6,665,439) in view of Prakash et al (US Patent No.: 6,778,698).

As to claim 9, Takahashi does not expressively disclose the method further comprising splitting a component into two components. Prakash discloses an image segmentation method that includes splitting a component into two components (column 3, lines 37-38). At the time of the invention, it would have been obvious to a person of

ordinary skill in the art to have combined the image segmentation method of Prakask with the image recognition method of Takahashi to split edge pixels of multiple objects erroneously identified as a single object into multiple objects.

As to claim 17, note the discussion above, this claim differs from claim 1 only in that claim 17 is computer program product whereas, claim 1 is method and the limitations computer-readable medium, instructions and programmable processor are additively recited in the preamble. Prakash teaches a computer program product stored on computer-readable medium (116, see Fig 2) comprising instructions (program instructions (see Fig 2) and executed by programmable processor (114, see Fig 2).

As to claim 33, note the discussion above of claims 1 and 17, all the limitations are discussed except: receiving a scanned image that includes multiple objects; erasing from the edge pixel map all the edge pixels that belong to the connected component or that are enclosed by the extracted object; and (6) repeating steps (2) through (5) until no more edge pixels are found. Takahaski teaches erasing from the edge pixel map all the edge pixels that belong to the connected component or that are enclosed by the extracted object (column 29, lines 63-65); and (6) repeating steps (2) through (5) until no more edge pixels are found. Takahaski does not expressly disclose receiving a scanned image that includes multiple objects. However it would have been

obvious to have receiving a scanned image that includes multiple objects because scanning is a well know technique for digitizing an image so that editing such as cropping or resized can be performed on the image.

7. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi (US Patent No.: 6,665,439) in view of Huang et al (US Patent No.: 5,671,290) further in view of Noda et al (Pub No.: US 2002/0030634).

As to claim 14, neither Takahashi or Huang disclose expressly the method further comprising: prior to cropping all the defined cropping areas, adjusting one or more of the defined cropping areas in response to user input. Noda discloses a method for image synthesis ([p][002], lines 1-2) wherein prior to cropping all the defined cropping areas, adjusting one or more of the defined cropping areas in response to user input ([p][0106], lines 1-3). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combined the image synthesis method of Noda with the image recognition method of Takahashi as modified by Huang so that a user could adjust the location of the boundaries or contours of the identified object(s) so that the object(s) can be cropped properly.

8. Claims 15 -16 and 18-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi (US Patent No.: 6,665,439) in view of Huang et al (US Patent No.: 5,671,290) further in view Noda et al (Pub No.: US 2002/0030634) further in view of Curtright et al (US Patent No.: 5,844,570).

As to claim 15, neither Takahashi, Huang nor Huang disclose expressly the method wherein adjusting one or more of the defined cropping areas includes merging two cropping areas into a single cropping area. Curtright discloses a method for generating digital map that includes merging two cropping areas into a single cropping area (column 6, lines 15-20). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to added the method for generating digital map of Curtright to the image recognition method of Takahashi as modified by Huang and Noda so that if one cropped area is identify as two area objects, the cropped areas are merged into a single area before performing the crop operation.

As to claim 16, Curtright does not expressly disclose the method wherein adjusting one or more of the defined cropping areas includes splitting a single cropping area into two or more cropping areas. However, it would have been obvious to split a single cropping area into two or more cropping areas so that if two cropped area are identified as one, the area would be split into two or more before performing the crop operation.

Claims 1-16 differ from claims 18-32 only in that claims 1-16 are a computer program product claim whereas, claims 18-32 are method claim. Thus, claims 18-32 are analyzed as previously discussed with respect to claims 1-16 above.

Conclusion

The prior art made part of the record and not relied upon is considered pertinent to applicant's disclosure.

Gaborski (US Patent No.: 6,018,590) is cited to teach method for locating a region of interest in a digital radiographic image

Ishida (US Patent No.: 6,404,921) is cited to teach a contour extraction method and apparatus.

Luo et al (Pub No.: 2004/0037460) is cited to teach a method for software detecting object in a digital image.

Yamazaki (Pub No.: 2003/0039394) is cited to teach a method for indentifying areas of image data that includes character images without relying on a character recognition process.

Borges et al (NPL Document Titled: A Split-and-Merge Segmentation Algorithm for Line Extraction in 2-D Range Images) is cited to teach a segmentation method for line extraction in 2D-images.

Saber et al (NPL Document Titled: Fusion of Color and Edge information for Improved segmentation and edge linking) is cited to teach a method for combining color image segmentation and edge linking.

Inquires

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrae S. Allison whose telephone number is (571) 270-1052. The examiner can normally be reached on Monday-Friday, 8:00 am - 5:00 pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Mancuso can be reached on (571) 272-7695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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January 3, 2007

A.A.



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